



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/702,313

11/06/2003

Volker Linzer

C-574

7972

7590

05/04/2006

Sun Chemical Corporation
222 Bridge Plaza South
Fort Lee, NJ 07024

EXAMINER

SASTRI, SATYA B

ART UNIT

PAPER NUMBER

1713

DATE MAILED: 05/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/702,313

Applicant(s)

LINZER ET AL.

Examiner

Satya B. Sastri

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-8, 10, 11, 13, 14 and 16-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1, 2, 5-8, 10, 11, 13, 14, 16 is/are rejected.
- 7) ☒ Claim(s) 3 and 17-22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to amendment filed on March 6, 2006. With the addition of new *claims 17-22* and cancellation of *claims 4, 9, 12, 15, claims 1-3, 5-8, 10, 11, 13, 14, 16-22* are now pending in the application.

2. It is noted that the originally filed applications had *claims 1-16* and therefore, the status identifier for newly added *claim 19* is incorrect in the amendment dated March 6, 2006.

3. Applicants' arguments with regard to election of species requirement are moot in view of the cancellation of *claims 9, 12, 15* drawn to non-elected invention. All previous prior art rejections are withdrawn in view of the amendment. New grounds of rejection are necessitated by the amendment and therefore, this action is made final.

Claim Objections

4. *Claims 1, 10* are objected to because of the following informalities: The claim language does not provide for a wt. basis for the amount of water in the composition.

Claim 5 is objected to for depending upon cancelled claim 4. It is interpreted as depending on claim 1 in this office action.

Appropriate corrections are required.

Previously Cited Statutes

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. *Claims 10, 13, 16* are rejected under 35 U.S.C. 103(a) as being unpatentable over Rooney et al. (WO 99/19369).

At the outset, it is noted that WO/991936 is used for date purposes while US 6,559,222 B1 is used as the English equivalent in the body of the rejection below.

Prior art to Rooney et al. discloses an aqueous polymer dispersions or solutions comprising a polymer, which is energy curable (column 2, lines 18-35). The polymer is characterized by a molecular wt. of about 1,000-20,000 and an acid number 100-300 (column 3, lines 52-55). An essential feature of polymer suitable for use in the prior art compositions is that the polymer must be free of cationic groups, soluble or dispersible in a basic aqueous solution and acid generating photoinitiator and must precipitate out of such solution upon exposure to radiation (column 3, lines 5-12). The polymers may be prepared, for example, by reacting styrene, maleic anhydride copolymer, a hydroxyl terminated acrylate and a monofunctional alcohol to form a partial ester. Subsequently, any remaining anhydride functionalities may be opened by water/ammonia mixture (column 3, lines 60-67).

The difference between the prior art and the instant invention is that the prior art does not teach the specific amount of greater than 10% and less than 30% water in the compositions.

The primary reference discloses curable aqueous dispersions or solutions that are based on acid containing resins and neutralized with ammonia which may be used in coatings and inks compositions. Amount of fluid carrier used in coating compositions is a variable routinely optimized by one of ordinary skill in the art. For instance, viscosity and coatability of the compositions may be altered by including varying amounts of water/carrier fluid in the compositions depending upon the end use. Given that the prior art does not contain negative teachings pertaining to water amounts less than 30%, it would have been obvious to a skilled artisan at the time the invention was made to include any amount of water, including amounts greater than 10 and less than 30% as recited in instant claims, and thereby obtain the instant invention, absence evidence of unexpected results to show criticality of the claimed range.

7. *Claims 1, 6-8, 11, 14* are rejected under 35 U.S.C. 103(a) as being unpatentable over Lundy et al. (US 5,393,643).

Lundy et al. disclose a waterborne photopolymerizable composition comprising a latex binder polymer having an acid functionality wherein the acid functionality is neutralized to at least 1 mole% with an aminoacrylate (abstract). A variety of acid functional monomers are disclosed in column 2, lines 20-32. The latex polymer may have an acid number between 40 to 250, preferably at least about 80 (column 2, lines 13-16) and a molecular wt. in the range of 500-200,000 (column 3, lines 5-6). At least 1% acid functionality may be neutralized with an aminoacrylate, preferably tertiary aminoacrylate.

The difference between the prior art and the instant invention is that the prior art does not teach the specific amount of greater than 10% and less than 30% water in the compositions.

The primary reference discloses working examples comprising greater than 30% water and discloses that the final waterborne compositions is generally between 20% to 40% solids. Amount of fluid carrier used in coating compositions is a variable routinely optimized by one of ordinary skill in the art. For instance, viscosity and coatability of the compositions may be altered by including varying amounts of water/carrier fluid in the compositions depending upon the end use. Given that the prior art does not contain negative teachings pertaining to water amounts less than 30%, it would have been obvious to a skilled artisan at the time the invention was made to include water in amounts greater than 10 and less than 30%, and thereby obtain the instant invention, absence evidence of unexpected results to show criticality of the claimed range.

It is the examiner's position that the amine compound would aid in the dissolving of the acid containing resin to afford homogenous solutions.

8. *Claims 1, 2, 5-8, 11, 14* are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagiwara et al. (GB 2,257,711 A).

Prior art to Hagiwara et al. concerns aqueous photosensitive resin composition comprising a carboxyl-containing resin (b) an amine compound (c) a photo curable unsaturated compound and (d) photo polymerization initiator. Components (a) may be acid/anhydride copolymer, wherein the anhydride groups have been ring opened with an alcohol or a primary amine, which have a polymerizable unsaturated bond (page 5, lines 9-24). Carboxyl group-containing resin may be post esterified in part with hydroxyl acrylates such as hydroxyethyl (meth)acrylate, hydroxypropyl (meth)acrylate etc. (page 5, lines 9-24). Carboxyl group-

Art Unit: 1713

containing resin has an acid value of 20-500 and a number average molecular weight of 1,000-100,000 (page 2, lines 30-32). Additionally, the composition includes an amine compound, such as ammonia, triethyl amine, diethanolamine etc., amine compounds with polymerizable unsaturated bond, such as dimethylaminoethyl methacrylate, diethylaminoethylacrylamide and allylamine (page 5, lines 24-35, page 6 lines 1-8). The composition includes an amine compound for the purpose of dissolving and or dispersing the carboxyl group-containing resin in water (page 5, lines 24-27). The amount of water which may be employed in the photosensitive resin composition is 30 to 90% by wt., based on the total wt. of the composition (page 8, line 35, page 9, lines 1-9).

The difference between the prior art and the instant invention is that the prior art does not teach the specific amount of greater than 10% and less than 30% water in the compositions.

The primary reference discloses photosensitive resin compositions with 30 to 90% by wt., based on the total wt. of the composition, of water (page 8, line 35, page 9, lines 1-9). Amount of fluid carrier used in coating compositions is a variable routinely optimized by one of ordinary skill in the art. For instance, viscosity and coatability of the compositions may be altered by including varying amounts of water/carrier fluid in the compositions depending upon the end use. Given that the prior art does not contain negative teachings pertaining to water amounts less than 30%, it would have been obvious to a skilled artisan at the time the invention was made to include water in amounts greater than 10 and less than 30%, and thereby obtain the instant invention, absence evidence of unexpected results to show criticality of the claimed range.

Art Unit: 1713

With regard to the acid value and molecular weight of the acid containing resin, it is noted that the prior art teaches a broad range for both, and it would have been obvious to a skilled artisan to include any of the disclosed ranges, includes the ranges recited in instant claims, absent evidence to the criticality of the claimed range.

Allowable Subject Matter

9. ***Claims 3, 17-22*** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and upon overcoming the objected presented in paragraph 4 of the office action.

Response to Arguments

10. Applicant's remark that "All the claims under rejection relate to a composition which is aqueous, energy curable, homogeneous solution comprising neutralization product of an ethylenically unsaturated acidic resin and an ethylenically unsaturated amine, in water" is incorrect, at least with regard to claims 10, 13, 16. With regard to the prior art to Rooney et al., applicants' quote that that the Rooney compositions concern dispersions and not solutions. This is incorrect because, throughout the disclosure and as cited in the above rejection in paragraph 6, the prior art concerns energy curable aqueous polymer dispersions or solutions comprising acid-containing polymers. Applicants assert that the prior art to Lundy et al. does not teach

Art Unit: 1713

compositions comprising an unsaturated amine. It is also unclear why the Lundy patent is disqualified the disclosure clearly teaches compositions comprising an aminoacrylate (abstract) which qualifies as an unsaturated amine.

Action Is Final

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Future Correspondence

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satya Sastri whose telephone number is 571-272-1112.

Art Unit: 1713

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300 for regular communications. The unofficial direct fax phone number to the Examiner's desk is 571-273-1112.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SATYA SASTRI

May 1, 2006



DAVID W. WU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700